Small Molecules

Garcinol

Epigenetic modifier; Inhibits histone acetyltransferases (HATs) p300 and pCAF

Catalog # 72452

5 mg

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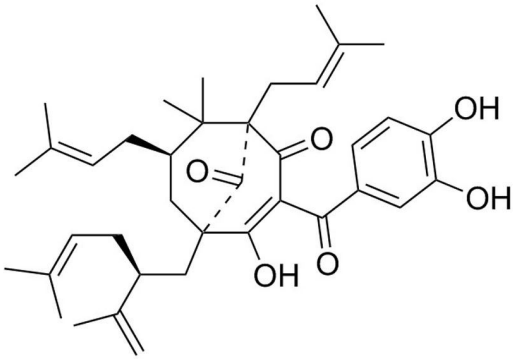
Product Description

Garcinol, a polyisoprenylated benzophenone isolated from Garcinia indica, is an inhibitor of the histone acetyltransferases (HATs) p300 and pCAF (IC_{50} = 7 and 5 µM, respectively; Balasubramanyam et al.). It also inhibits the HAT Gcn5 in Cryptococcus neoformans, inducing temperature sensitivity and impairing growth (O'Meara et al.).

Molecular Name:	Garcinol
Alternative Names:	Camboginol
CAS Number:	78824-30-3
Chemical Formula:	$C_{38}H_{50}O_6$
Molecular Weight:	602.8 g/mol
Purity:	≥ 95%
Chemical Name:	3-(3,4-dihydroxybenzoyl)-4-hydroxy-8,8-dimethyl-1,7-bis(3-methyl-2-buten-1-yl)-5-[(2S)-5-methyl-2-(1-methylethenyl)-4-hexen-1-yl]-bicyclo[3.3.1]non-3-ene-2,9-dione
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· Absolute ethanol ≤ 30 mM · DMSO ≤ 30 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 166 µL of fresh DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL
· Promotes ex vivo expansion of human hematopoietic stem cells (Nishino et al.).
DIFFERENTIATION
· Promotes neurogenesis in rat cortical progenitor cells (Weng et al.).
CANCER RESEARCH
· Induces apoptosis in several types of cancer cells and has anti-inflammatory actions (Koeberle et al.; Prasad et al.).

References

Balasubramanyam K et al. (2004) Polyisoprenylated benzophenone, garcinol, a natural histone acetyltransferase inhibitor, represses chromatin transcription and alters global gene expression. J Biol Chem 279(32): 33716–26.
Koeberle A et al. (2009) Identification of 5-lipoxygenase and microsomal prostaglandin E2 synthase-1 as functional targets of the anti-inflammatory and anti-carcinogenic garcinol. Biochem Pharmacol 77(9): 1513–21.
Nishino T et al. (2011) Ex vivo expansion of human hematopoietic stem cells by garcinol, a potent inhibitor of histone acetyltransferase. P. Rameshwar (Ed.). PLoS One 6(9): e24298.
O'Meara TR et al. (2010) Cryptococcus neoformans histone acetyltransferase Gcn5 regulates fungal adaptation to the host. Eukaryot Cell 9(8): 1193–202.
Prasad S et al. (2010) Garcinol potentiates TRAIL-induced apoptosis through modulation of death receptors and antiapoptotic proteins. Mol Cancer Ther 9(4): 856–68.
Weng M-S et al. (2011) Garcinol promotes neurogenesis in rat cortical progenitor cells through the duration of extracellular signal-regulated kinase signaling. J Agric Food Chem 59(3): 1031–40.

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